

Message Text

UNCLASSIFIED

PAGE 01 RIO DE 03644 101513Z

53

ACTION ARA-10

INFO OCT-01 ISO-00 ERDA-07 AID-05 CEA-01 CIAE-00 CIEP-02

COME-00 DODE-00 EB-07 FEAE-00 FPC-01 H-02 INR-07

INT-05 L-03 NSAE-00 NSC-05 OMB-01 PM-04 USIA-15

SAM-01 OES-05 SP-02 SS-15 STRE-00 TRSE-00 PA-02 PRS-01

/102 W

----- 075697

R 101155Z NOV 75

FM AMCONSUL RIO DE JANEIRO

TO SECSTATE WASHDC 3000

INFO AMEMBASSY BRASILIA

UNCLAS RIO DE JANEIRO 3644

DEPT. PASS USGS, BUREAU OF MINES, ERDA, FEA, COMMERCE AND
DEFENSE (ASN/I&L)

E. O. 11652: N/A

TAGS: BR, ENRG, BEXP

SUBJ: BRAZIL TO BUILD COMMERCIAL-SIZE SHALE OIL PLANT

1. SUMMARY: BRAZIL, WHICH HAS ONE OF THE WORLD'S LARGEST OIL SHALE RESOURCES, HAS BEEN OPERATING A PROTOTYPE PLANT TO PRODUCE 1,000 BPD OF SHALE OIL. ON OCT. 9 PRESIDENT GEISEL ANNOUNCED THAT PETROBRAS, THE GOB-OWNED OIL COMPANY, WILL PROCEED TO BUILD A COMMERCIAL PLANT TO PRODUCE 51,000 BPD. WHEN COMPLETED IN 1980, IT WILL BE THE FIRST COMMERCIAL-SIZE SHALE OIL OPERATION IN THE FREE WORLD. THE REQUIRED INVESTMENT IS EXPECTED TO BE IN THE RANGE OF \$800 MILLION. AT LEAST \$200 MILLION OF IMPORTED EQUIPMENT WILL BE REQUIRED, ESPECIALLY MINING EQUIPMENT. ALTHOUGH FINAL APPROVAL OF THE PROJECT IS NOT EXPECTED UNTIL JANUARY, PETROBRAS IS ABOUT TO BEGIN PLACING ORDERS FOR SOME EQUIPMENT.
END SUMMARY.

2. ON NOV. 4-6 DIRECTOR OF U.S. NAVY OFFICE OF PETROLEUM AND
UNCLASSIFIED

UNCLASSIFIED

PAGE 02 RIO DE 03644 101513Z

OIL SHALE RESERVES AND TWO STAFF OFFICERS, ACCOMPANIED BY

EMBASSY MINERALS OFFICER, VISITED PETROBRAS PROTOTYPE OIL SHALE PROJECT AT SAO MATEUS, STATE OF PARANA. ACCORDING TO PROJECT SUPERINTENDENT, DR. CARLOS BRUNI, RECOVERABLE SHALE RESERVES OF THE IRATI FORMATION OF PERMIAN AGE LOCATED IN THE SAO MATEUS AREA ARE ESTIMATED AT 600 MILLION BARRELS. BRAZIL POSSESSES NUMEROUS OIL SHALE DEPOSITS, THE MOST IMPORTANT OF WHICH IS THE ONE AT SAO MATEUS, SITUATED 140 KM SOUTH-WEST OF CURITIBA AND COVERING A 64 SQ. KM. AREA. IN ADDITION TO OIL SHALE, THE DEPOSIT CONTAINS AN ESTIMATED 10 MILLION METRIC TONS OF SULFUR, 4.5 MILLION TONS OF LIQUIFIED PETROLEUM GAS (LPG), AND 20 BILLION CUBIC METERS OF LIGHT FUEL GAS.

3. THE \$30-MILLION PROTOTYPE PLANT STARTED UP IN MID- 1972. DAILY PRODUCTION CAPACITY IS 1,000 BBL. OF SHALE OIL, 17 TONS OF 99.96 PERCENT SULFUR AND 36,500 CUBIC METERS OF LIGHT FUEL GAS. PETROBRAS EMPLOYS 530 PEOPLE ON THE PROJECT, 100 OF WHOM RESIDE IN CURITIBA, SITE OF THE OPERATION'S HEAD OFFICE.

4. COMMERCIAL PLANT, WHICH IS TO RECEIVE FINAL APPROVAL BY PETROBRAS BOARD OF DIRECTORS IN JANUARY 1976, IS TO COME ON STREAM END OF 1980. PLANT WILL REQUIRE DAILY SUPPLY OF 106,000 TONS OF SHALE TO PRODUCE 51,000 BBL. OF OIL, 880 TONS OF SULFUR, 490 TONS OF LPG AND 1.8 MILLION CUBIC METERS OF LIGHT GAS. 8,000 BPD OF SHALE OIL OUTPUT WILL BE USED FOR PLANT FUEL. CONVENTIONAL OPEN-PIT MINING WILL BE ON TWO BEDS, THE UPPER ONE 6.5 METERS THICK, THE LOWER 3.2 METERS THICK, SEPARATED BY 8.6 METERS OF INTERMEDIATE MATERIAL COMPOSED OF LIMESTONE AND BARREN SHALE. UPPER BED CONTAINS 6.4 PERCENT OIL, LOWER BED 9.1 PERCENT. AVERAGE COMBINED OIL CONTENT OF BOTH SEAMS IS 7.4 PERCENT. DEPT OF OVERBURDEN AVERAGES 14 METERS. FOLLOWING PRIMARY, SECONDARY AND TERTIARY CRUSHING, SHALE WILL BE FED INTO 20 RETORTS, EACH HAVING A DIAMETER OF 11.5 METERS (PETROBRAS RETORTING PROCESS, WHICH USES EXTERNAL COMBUSTION, IS KNOWN AS PETROSIX.) SPENT SHALE WILL BE RETURNED TO THE MINE AREA AND COVERED WITH ORIGINAL OVERBURDEN.

5. ALTHOUGH DR. BRUNI WAS RELUCTANT TO DISCLOSE TOTAL INVESTMENT REQUIRED FOR NEW PLANT, HE DID STATE THAT IT WOULD BE COMPARABLE TO U.S. ESTIMATES, WHICH PRESUMABLY PUT IT IN THE RANGE OF \$800 MILLION. HE STATED FURTHER THAT THE OIL DEFINITELY WILL BE UNCLASSIFIED

UNCLASSIFIED

PAGE 03 RIO DE 03644 101513Z

PRODUCED AT A LOWER COST THAN CURRENT PRICE OF IMPORTED OIL. BRUNI SAID THAT \$120 MILLION OF IMPORTED MINING EQUIPMENT WILL BE REQUIRED, INCLUDING SIX DRAGLINES (TWO OF 105-CUBIC YARD CAPACITY, TWO OF 65 YARDS, AND TWO OF 18 YARDS); SIX MINING SHOVELS (FOUR OF 20-YARD CAPACITY, TWO OF 12 YARDS); 15 LARGE - SIX TRACTORS; 40 150-TON TRUCKS; AND SIX DRILLS. OTHER GOOD SALES PROSPECTS FOR FOREIGN-MADE EQUIPMENT INCLUDE TWO 4,500-TPH PRIMARY CRUSHERS, FOUR SECONDARY CRUSHERS, LARGE

COMPRESSORS AND BLOWERS, INSTRUMENTATION AND HEATERS FOR THE SULFUR RECOVERY UNIT. MOST OF THE REMAINING EQUIPMENT CAN BE MANUFACTURED IN BRAZIL. ALTHOUGH FINAL PROJECT APPROVAL IS TO BE MADE IN JANUARY, PETROBRAS INTENDS TO PLACE ORDER FOR DRAGLINES SHORTLY WITH EITHER MARION OR BUCYRUS-ERIE.

6. FOR ADDITIONAL INFORMATION, INTERESTED SUPPLIERS SHOULD CONTACT DR. CARLOS BRUNI, SUPERINTENDENCIA DA INDUSTRIALIZACAO DO XISTO, RUA EBANO PEREIRA, 11, CURITIBA; TELEPHONE 24-9211; TELEX 041-5071.

7. COMMENT: IF BRAZIL'S SHALE OIL DEVELOPMENT PROCEEDS AS SCHEDULED, IT WILL PRESENT A WELCOME NEW ENERGY SOURCE FOR THE COUNTRY AND SAVE, AT TODAY'S PETROLEUM PRICES, AT LEAST \$250 MILLION A YEAR IN FOREIGN EXCHANGE OUTLAYS, IN ADDITION TO REPRESENTING A MAJOR TECHNOLOGICAL ACHIEVEMENT. SINCE BRAZIL'S OIL SHALE RESOURCES ARE CONSIDERED TO BE THE SECOND-LARGEST IN THE FREE WORLD, AFTER THE U.S., THE LONG-TERM DOMESTIC IMPLICATIONS FOR SHALE OIL DEVELOPMENT ARE CONSIDERABLE. IN THE SHORTER RUN, HOWEVER, THE NET PRODUCTION OF 43,000 BPD OF SHALE OIL SCHEDULED FOR THE END OF 1980 WILL MEET ONLY A RELATIVELY SMALL PORTION OF BRAZIL'S TOTAL PETROLEUM REQUIREMENT. PRESENT CONSUMPTION IS ABOUT 850,000 BPD, OF WHICH 180,000 BPD COMES FROM DOMESTIC PRODUCTION. WHILE IT IS DIFFICULT TO ATTEMPT TO FORECAST THE PRODUCTION IN 1981 (SEE RIO 3292). IT SEEMS PROBABLY THAT THE LEVEL OF BRAZIL'S PETROLEUM CONSUMPTION WILL EXCEED ONE MILLION BPD, OF WHICH SHALE OIL WOULD ACCOUNT FOR SOME FOUR PERCENT.
DEXTER

UNCLASSIFIED

NNN

Message Attributes

Automatic Decaptioning: X
Capture Date: 01 JAN 1994
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: CONSTRUCTION, REFINERIES, OIL SHALE
Control Number: n/a
Copy: SINGLE
Draft Date: 10 NOV 1975
Decaption Date: 01 JAN 1960
Decaption Note:
Disposition Action: n/a
Disposition Approved on Date:
Disposition Authority: n/a
Disposition Case Number: n/a
Disposition Comment:
Disposition Date: 01 JAN 1960
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1975RIODE03644
Document Source: CORE
Document Unique ID: 00
Drafter: n/a
Enclosure: n/a
Executive Order: N/A
Errors: N/A
Film Number: D750390-0788
From: RIO DE JANEIRO
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1975/newtext/t19751158/aaaacaei.tel
Line Count: 144
Locator: TEXT ON-LINE, ON MICROFILM
Office: ACTION ARA
Original Classification: UNCLASSIFIED
Original Handling Restrictions: n/a
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 3
Previous Channel Indicators: n/a
Previous Classification: n/a
Previous Handling Restrictions: n/a
Reference: n/a
Review Action: RELEASED, APPROVED
Review Authority: buchant0
Review Comment: n/a
Review Content Flags:
Review Date: 08 SEP 2003
Review Event:
Review Exemptions: n/a
Review History: RELEASED <08 SEP 2003 by ReddocGW>; APPROVED <23 FEB 2004 by buchant0>
Review Markings:

Margaret P. Grafeld
Declassified/Released
US Department of State
EO Systematic Review
06 JUL 2006

Review Media Identifier:
Review Referrals: n/a
Review Release Date: n/a
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
Secure: OPEN
Status: NATIVE
Subject: BRAZIL TO BUILD COMMERCIAL-SIZE SHALE OIL PLANT
TAGS: ENRG, BEXP, BR
To: STATE
Type: TE
Markings: Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 06 JUL 2006